

REMARKS

This application has been carefully reviewed in light of the final Office Action dated January 28, 2008. Claims 1, 4, 7 to 9, 26 and 27 are pending in the application, of which Claims 1, 8 and 9 are in independent form. Reconsideration and further examination are respectfully requested.

Claims 1, 4, 7 to 9, 26 and 27 are rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 5,566,252 (Miyaza) in view of U.S. Patent No. 5,586,242 (McQueen). Reconsideration and withdrawal of this rejection are respectfully requested.

The present invention concerns generating a reduced or enlarged reproduced image containing characters by substituting recognized characters found in the original read image with characters at a second size appropriate for the reduced or enlarged reproduced image. In order to generate the reproduced image, the spacing between the substituted characters must be adjusted in order for the characters to fit within the boundaries of the reduced or enlarged reproduced image. To do so, a plurality of character gap widths are selectively allocated between adjacent characters in accordance with a width of the characters as enlarged or reduced and in accordance with the width of the reproduced image. The width of the reproduced image is determined by a width of the read image multiplied by a magnification ratio.

Turning to specific claim language, amended independent Claim 1 is directed to an image processing apparatus which includes a reading unit constructed to read an image in an original; a character recognizing unit constructed to recognize a character in the image read by the reading unit and to output a character code as a result of recognition; a storing unit constructed to store a character font; a readout unit constructed to read the character font from the storing unit based on the character code output by the character recognizing unit; a detecting unit

constructed to detect first character size concerning the character in the image read by the reading unit; a setting unit constructed to set a magnification ratio based on an instruction by an operator; a determining unit constructed to determine second character size based on the first character size and the magnification ratio; a selecting unit constructed to select a type of the character font stored in the storing unit based on an instruction by the operator; and a generating unit constructed to generate a reproduced image, which includes characters having the second character size, based on the character font, the type of which is selected by the selecting unit. The generating unit generates the reproduced image by selectively allocating a plurality of character gap widths between adjacent characters, in accordance with a width of the characters having the second character size and a reproduction width of an image to be reproduced, the reproduction width being fit to a width of the image read by the reading unit multiplied by the magnification ratio.

Applicant respectfully submits that the cited references, namely Miyaza and McQueen, considered either alone or in combination, fail to disclose or suggest all of the features of the apparatus of Claim 1. In particular, the cited references, either alone or in combination, fail to disclose or suggest at least the features of generating a reproduced image by selectively allocating a plurality of character gap widths between adjacent characters, in accordance with a width of the characters having a second character size and a reproduction width of an image to be reproduced, said reproduction width being fit to a width of the image read in a reading step multiplied by magnification ratio.

In contrast, Miyaza discloses a system wherein the readability of a reduced image is enhanced by manipulating individual lines that compose a character. Specifically, Miyaza states "as illustrated in FIG. 93(c), when the line width and density of the magnified character 62

are out of the predetermined range, if a copy is produced at the magnification rate specified in step 32, the magnified character 62 becomes unreadable. Therefore, the line width of the magnified character 62 is corrected to be in the predetermined range by making a thinner portion thicker and a thicker portion thinner so as to obtain a corrected character 64 (step 43). Then, the above-mentioned copying operation is performed (steps 41 and 42) and the magnification mode comes to an end." (See Miyaza, Column 71, Line 25 to Column 73, Line 38).

Applicant respectfully submits that the Examiner has confused the "line width" of Miyaza with "width of the character" of the present invention. In Miyaza, "line width" is the thickness of a line constituting a stroke of one character. However, in the present invention, the width of the character is the width in the main scan direction for one character. Accordingly, these "widths" are different from each other.

Furthermore, in Miyaza, when a copy operation including a magnification change is performed, the line width of the magnified character is corrected as needed to improve character readability. Consequently, in Miyaza, an image which contains a plurality of character gap widths may result when a reproduced image is generated. However, Miyaza merely discloses that such an image containing the plurality of character gap widths is generated as a byproduct of the line width changing process, but Miyaza does not disclose that a plurality of character gap widths between adjacent characters are selectively allocated in order to ensure that the width of the reproduced image is correct. Furthermore, even if an apparatus in accordance with Miyaza ends up allocating a plurality of character gap widths as featured in the present invention, this operation is merely performed according to the line width of the magnified character. (See Column 72, Lines 33 to 43 of Miyaza). This is quite different from the present invention which selectively allocates a plurality of character gap widths between adjacent

characters, in accordance with a width of the characters having the second character size and a reproduction width of an image to be reproduced.

It should also be noted that the disclosures of Miyaza are based on the premise that magnification change is performed without replacing a read character with font data. (See Column 71, Line 25 to Column 73, Line 38). On such a premise, since there is a case where the character readability deteriorates when the character is magnified, it is necessary to correct the line width of the magnified character in order to improve readability. Accordingly, Miyaza merely discloses that the image containing the plurality of character gap widths is resultingly generated according to the line width of the magnified character. On the other hand, the present invention is based on the premise that magnification change is performed after replacing a read character with font data. Thus, in the present invention, since the character has been converted into a new font, it is unnecessary to correct the line width of the magnified character. In other words, the present invention selectively allocates the plurality of character gap widths between adjacent characters according to the width of the characters having the second character size and the reproduction width of the image to be reproduced. This is quite different from Miyaza in that, in an image generated according to Miyaza, the image may contain a plurality of character gap widths, but they are generated according to the line width of the magnified character and not selectively allocated in accordance with a width of the characters and a reproduction width of an image to be reproduced.

Applicant has reviewed the cited portions of McQueen and submits that nothing in McQueen is found to cure the deficiencies of Miyaza.

In light of the deficiencies of Miyaza and McQueen as discussed above, Applicant submits that amended independent Claim 1 is now in condition for allowance and respectfully requests same.

Amended independent Claims 8 and 9 are directed to a method and a computer-readable medium, respectively, substantially in accordance with the apparatus of Claim 1. Accordingly, Applicant submits that Claims 8 and 9 are also now in condition for allowance and respectfully requests same.

The other pending claims in this application are each dependent from the independent claims discussed above and are therefore believed allowable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

CONCLUSION

No claim fees are believed due; however, should it be determined that additional claim fees are required, the Director is hereby authorized to charge such fees to Deposit Account 50-3939.

Applicant's undersigned attorney may be reached in our Costa Mesa, CA office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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